US Army Corps of Engineers®
Nashville District

Public Notice

Nrs02.392 Date: April 1, 2004

Please address all comments to:
Nashville District Corps of Engineers, Planning Branch
P.O. Box 1070, Nashville, TN 37202-1070

JOINT PUBLIC NOTICE

US ARMY CORPS OF ENGINEERS
TENNESSEE VALLEY AUTHORITY
AND
STATE OF TENNESSEE

SUBJECT: Improved Approach Channel and Proposed Replacement of Chickamauga Lock, Tennessee River Mile (TRM) 470.0 through 470.6.

TO ALL CONCERNED: In compliance with Section 404(r) of the Clean Water Act (CWA) PL 92-500, notice is hereby given that the Nashville District Corps of Engineers proposes to replace the lock at Chickamauga Lock and Dam. The existing lock has experienced concrete aggregate growth, which has weakened the structure and may cause it to become unstable and unsafe. Certification will be sought from the State of Tennessee, Department of Environment and Conservation, Division of Water Pollution Control, pursuant to Section 401(a)(1) of the CWA, that applicable water quality standards will not be violated. Under Section 404(r), however, the United States Congress can exempt a project from certification if for some reason the State of Tennessee is unwilling or legally unable to grant certification.

LOCATION: Site Between Miles 470.0 and 470.6 Tennessee River (Nickajack Lake), Chattanooga, Tennessee, Hamilton County, (USGS East Chattanooga , TN 7.5 Minute Series Quadrangle).

WATERSHED DESCRIPTION: The project is located just downstream of the Chickamauga Lake dam. The Nickajack Reservoir downstream of the project is listed as partially supporting because of low dissolved oxygen. Based on available information, two federally-listed endangered species, the Pink mucket (*Lampsilis abrupta*) and the snail darter, (*Percina tanasi*), and one threatened species, the Mountain skullcap (*Scutellaria montana*), as identified under the Endangered Species Act, are either in or adjacent to the project area. Formal consultation procedures with the U.S. Fish and Wildlife Service have been completed and

both a Coordination Act Report and a Biological Opinion have been received.

DESCRIPTION: Chickamauga Lock is experiencing structural problems resulting from alkali aggregate reaction (AAR). AAR is a reaction between the alkali in the cement and the rock aggregate, which results in a physical expansion of concrete structures. This expansion of the concrete threatens the structural integrity of the lock and has created an unsafe condition in the lock. It is no longer economically feasible to continue to repair Chickamauga lock.

The proposed work consists of constructing a 110 x 600 foot or a 75 x 400 foot lock at Chickamauga Dam. The proposed lock would be located on the riverside of the existing lock and downstream of the existing dam (see the photograph of the existing lock and proposed 110 x 600 foot lock in Figure 1). The downstream location would allow use of the existing spillway dam as an upstream water barrier during construction of the new lock. The riverside location for the new lock would cause the loss of four spillway bays, eventually requiring the removal of four gates and a portion of three concrete piers. Part of the downstream approach wall to the existing lock also would be removed. To provide a downstream water barrier during construction, a sheet pile cofferdam connecting the dam and existing lock would be constructed. A temporary bascule-type drawbridge would be constructed across the lower approach to the existing lock to provide access to the new lock construction site within the cofferdam. After the cofferdam is removed, the bascule bridge would be relocated to provide a permanent access bridge to the new lock. Vertical and horizontal clearances and operational procedures for the bridges would require approval by the U.S. Coast Guard. Upstream and downstream approach walls, 800 feet in length, would be built on the spillway side, with the downstream approach wall extending under and through the Norfolk Southern Railway Bridge. Approximately 3,200 feet of the navigation channel would be widened immediately downstream of the existing Chickamauga Lock. Two new 30 foot diameter mooring cells would be built downstream of the new lock. The State Road (SR) 153 bridge across the lock would remain open during construction, and Lake Resort Drive would be relocated. As part of the relocation of Lake Resort Drive, two new bridges would be built, one over North Chickamauga Creek and one for grade separation between Lake Resort Drive and the permanent access road to the North Chickamauga Creek Greenway.

After the new lock is completed (or sooner if conditions dictate) the existing lock would be closed to navigation. This action would make the structure a safe water barrier. Once the lock was closed, a portion of the lock chamber and the associated wall culverts would be plugged with concrete. The upper and lower mitre gates would be removed. Post-tensioning would strengthen walls, and wider slots would be cut in the approach walls to

prevent problems from continued concrete growth. No cofferdams would be required; however, installation of needle dams (similar to a cofferdam but more temporary) and dewatering of the chamber would be required.

The replacement of the existing lock will require the excavation or dredging of approximately 123,000 cubic yards of substrate and the blasting and removal of approximately 181,000 cubic yards of rock below Ordinary High Water. All of the excavated material will be disposed of off-site in accordance with local ordinances.

Construction of the lock will require almost 300,000 cubic yards of concrete, 31,1214 cubic yards of gravel fill, and a variety of precast beams, rebar, and other components. These materials will be used to construct the lock itself. An estimated 26,390 cubic yards of riprap would be placed along the shoreline along the channel modification, and most will be above ordinary high water. The stone will range in weight from a minimum of 86 pounds (43 kg) to a maximum of 300 pounds (165 kg) and will be obtained from a clean, native source.

A Final Supplemental Environmental Impact Statement FSEIS has been prepared to document anticipated impacts of the work. Copies of the FSEIS may be obtained by writing to: U.S. Army Corps of Engineers, Planning Branch, Attention: Wayne Easterling, PO Box 1070, Nashville, TN, 37202-1070, or by calling Mr. Easterling at (615) 736-7847. This notice also serves as Notice of Availability of the FSEIS for review at the Estes Kefauver Federal Building Room A532, 110 Ninth Avenue South, Nashville, Tennessee. In addition to consideration of other factors of the public interest, the review process will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404 (r) of the Clean Water Act (40 CFR Part 230). A copy of the District Engineer's 404 (b)(1) evaluation is also available for review at the location listed above.

All proposed alternatives will have an adverse effect on the Chickamauga Lock and Dam complex, a property that has been determined eligible for listing in the National Register of Historic Places.

All of the construct new lock alternatives include a downstream approach wall that would extend beyond the Norfolk and Southern Railroad Bridge. In addition, at least one of the support piers of the bridge would be surrounded or wrapped by metal sheet pilings to protect it from inadvertent collisions by barges. The National Register eligibility of the bridge has not been evaluated. Although the actual structure of the bridge will not be directly affected by the approach wall construction, the visual context of the bridge will be affected. An evaluation of the National Register eligibility of the bridge and an assessment of

adverse effect will be required before a Record of Decision can be signed.

Resulting work will adversely affect properties that are eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has been notified and the Tennessee State Historic Preservation Officer (SHPO) is being consulted to determine how such adverse effects can be taken into account by avoidance, minimization, or mitigation. Due to the presence of prehistoric archaeological remains, consultation with Native American Tribes has been initiated. In accordance with requirements at 36CRF § 800.6, the Corps of Engineers proposes to address the adverse effects of lock replacement within the context of a Memorandum of Agreement (MOA) amongst the Corps of Engineers, the Tennessee Valley Authority, and the Tennessee State Historic Preservation Officer. The MOA will stipulate 1) measures that will be implemented to avoid, minimize, or mitigate potential adverse effects on historic properties including the Chickamauga Lock and Dam complex and other potential historic properties, including archeological sites, 2) requirements for additional archeological survey and testing, and 3) requirements for archeological monitoring during certain aspects of construction.

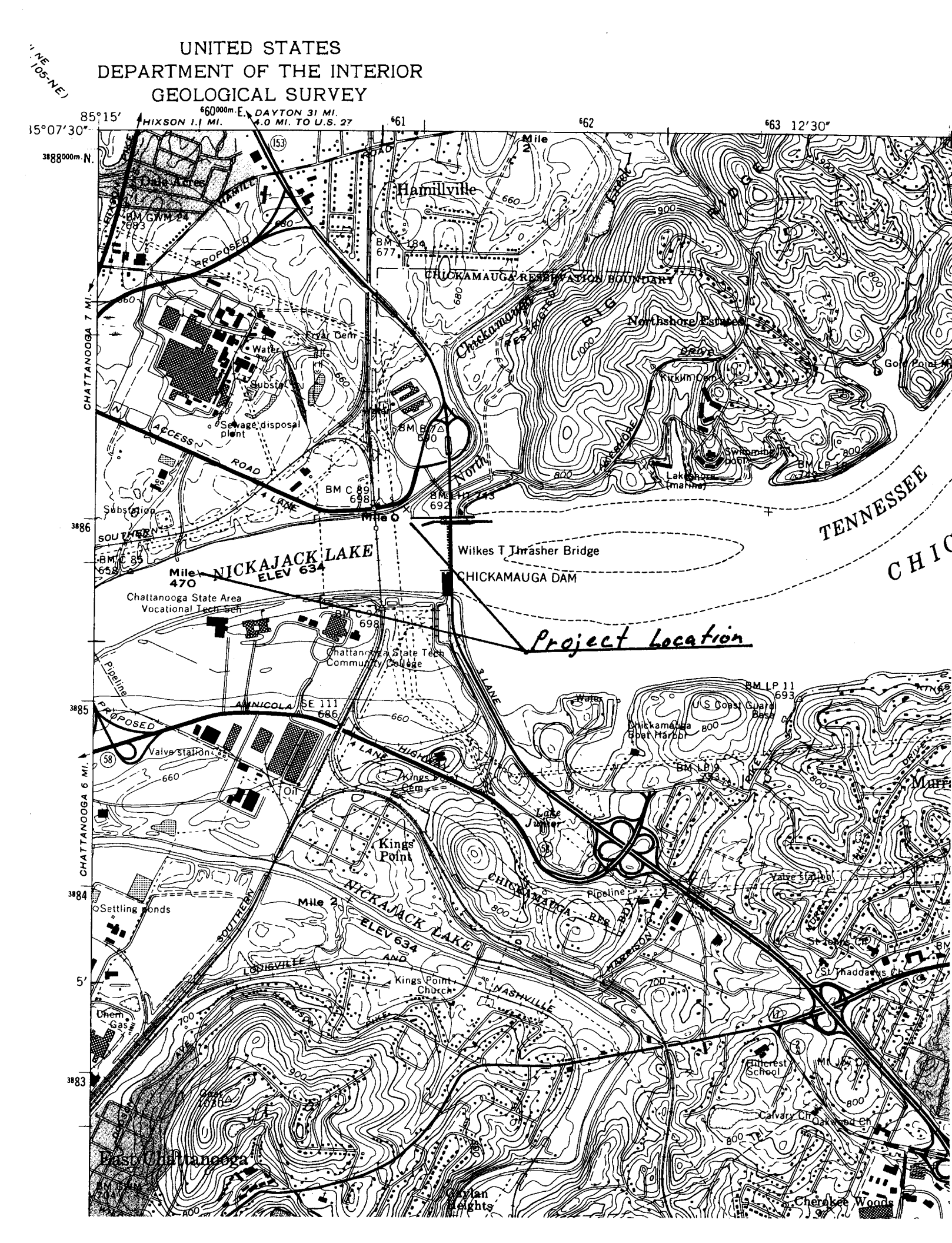
Other federal, state and local approvals and/or amendments required for the proposed work are as follows:

a. Tennessee Valley Authority (TVA) approval under Section 26a of the TVA Act. In addition to other provisions of its approval, TVA would require the applicant to employ best management practices to control erosion and sedimentation, as necessary, to prevent adverse aquatic impacts.

b. An NPDES Stormwater Permit will be required from the State of Tennessee.

Any person may request in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

Any response to this notice should be directed to the Planning Branch, Mr. Wayne Easterling, P.O. Box 1070, Nashville, Tennessee 37202-1070, (615) 736-7847.


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
85°15'
35°07'30"
660000m.E.
DAYTON 31 MI.
HIXSON 1.1 MI.
4.0 MI. TO U.S. 27
661
662
663 12'30"
3888000m.N.
Dale Acres
Hamillville
BM GWM 24
BM 184
677
CHICKAMAUGA RESERVATION BOUNDARY
Chickamauga Battlefield
Northshore Estates
Water
Fryar Cem
Substation
Sewage disposal plant
ACCESS ROAD
BM B 7
BM C 89
698
BM HT 243
692
Mile 0
Substation
SOUTHERN
BM C 85
658
Mile 470
NICKAJACK LAKE
ELEV 634
Wilkes T Thrasher Bridge
CHICKAMAUGA DAM
TENNESSEE
Chattanooga State Area Vocational Tech Sch
Project Location
Chattanooga State Tech Community College
Pipeline
PROPOSED
AMNICOLA
SE 111
686
Valve station
Oil
Kings Point Cem
Kings Point
Lake Junior
BM LP 11
693
U S Coast Guard Base
Chickamauga Boat Harbor
Water
Pipeline
Valve station
Settling ponds
Mile 2
NICKAJACK LAKE
ELEV 634
AND
Kings Point Church
LOVEVILLE
NASHVILLE
HARRISON
Chem Gas
Hillcrest School
Mt Jr Ch
Calvary Ch
Oakwood Ch
St Thaddaeus Ch
East Chattanooga
Taylan Heights
Cherokee Woods
CHATTANOOGA 7 MI.
CHATTANOOGA 6 MI.
3 LANE
HIGHWAY
CHICKAMAUGA RES BDY
Mile 2


USGS